Southwest Metro Corridor and Bankstown Early Works Construction Monitoring Report 3 March 2022- August 2022

SMCSWSSJ-JHL-WEC-EM-REP-000027

Document and Revision History

Document Details	
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Revisions

Revision	Date	Description	Prepared by	Reviewed by
Rev A	12/09/2022	Initial Issue	MT	LD
RevB	28/09/2022	Addressing comments from JHLOR EM	MT	LD
Rev C	25/10/2022	Addressing ER and SM comments	MT	LD

Management reviews

Review date	Details	Reviewed by

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Table of Contents

Compliance Matrix

Condition	Requirement	Reference
C14	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.	Section 1.1

1. Introduction

The Construction Monitoring Program is being implemented to monitor impacts on surrounding surface water quality resources and impacts from noise and vibration on the surrounding areas during the construction phase. The surface water monitoring program and noise and vibration monitoring program are also both designed to assess the effectiveness of the mitigation measures applied as part of the Southwest Metro Corridor Works (SMC) and Bankstown Early Works (BEW). This is the 3rd construction monitoring report, the reporting periods for each document area as follows;

1. Construction monitoring report 001 for the period of March 2021 – August 2021
2. Construction monitoring report 002 for the period of September 2021 – Feb 2022
3. Construction monitoring report 003 for the period of March 2022 – August 2022

These reports are to be prepared on 6 monthly until the completion of the project or when JHLORJV are no longer completing works in established monitoring areas.

1.1 Submission Requirements

In accordance with condition C14, this will be submitted to the following agencies for information:

- City of Canterbury Bankstown
- Inner West Council
- DPE (Formerly DPIE)

The Independent Environmental Representative will review the report prior to submission.

1.2 Surface Water

The project site is located within the rail corridor on the T3 Bankstown line between Sydenham and Bankstown, NSW.

The Project site forms part of the overall Cooks River, Coxs Creek and Salt Pan Creek catchment areas. The water from the area discharges into these water catchments via local stormwater drainage or overland flow. The surrounding catchment areas are urbanised with a mix of residential, commercial, and industrial properties.

Water quality is measured on an ongoing basis for the wider Cooks River catchment by the *Environment, Energy and Science - NSW DPE* as part of the Beach watch programme. The monitoring pointis at Kyeemagh Baths at the mouth of the Cooks River in Port Botany. Water quality within the Cooks River catchment is influenced by stormwater, fertilisers, industrial discharge and sewagecontamination.

The EIS, referring to the Salt Pan Creek catchments, states “A number of beaches in the lower Georges River are monitored as part of DPE-EES’s Beachwatch program. The most recent State of the Beaches annual report noted that these locations were graded as ‘good’, meaning that the quality of the water was appropriate for swimming most of the time”. It is noted however that the catchment is impact by development, including construction impacts and litter, as well as other influences such as wastewater overflows and a landfill operation.

Please refer to the Construction Soil and Water Management Plan for further information on surface water within the project area.

Objectives for water quality management during construction are:

- Minimise pollution of surface water through appropriate erosion and sediment control
- Maintain existing water quality of surrounding surface watercourses

1.3 Noise and Vibration

The area surrounding the SMC project contains a variety of land-use types and receivers, including residential receivers, commercial, industrial, sensitive non-residential receivers. These land-uses are mixed within the identified noise catchments, though in general there are clusters of industrial and commercial areas surrounding stations, and primarily residential areas between stations. The area surrounding the project is affected by rail noise and vibration.

Majority of the works will occur within the rail corridor between stations, works will mainly occur adjacent to residential properties.

There are a number of sensitive non-residential receivers identified within the vicinity of the project works. The full list of receivers can be found within the CNVIS (SMCSWSSJ-JHL-WEC-EM-REP-000011-Construction Noise and Vibration Impact Statement-Rev04) A summary of the sensitive receivers are;

- 17 Childcare and Early Learning Centres
- 25 Primary and High Schools
- 24 Hospitals, Medical Centres, clinics and Aged Care Facilities
- 23 Places of Worship

Objectives for noise and vibration management on the project are:

- Minimise unreasonable noise and vibration impacts on residents and businesses
- Avoid structural damage to buildings or heritages items as a result of construction vibration
- Maintain positive, co-operative relationships with schools, childcare centres, local residents and building owners, and undertake active community consultation

Construction noise levels for some SMC activities are expected to exceed the external noise management level at times, particularly during works outside of standard hours, resulting in noise impacts to outdoor spaces. Internal and external noise levels will be assessed as part of the OOHW protocol and monitored accordingly.

2. Methodology

2.1 Surface Water

Surface water quality monitoring is undertaken in accordance with the Water Quality Monitoring Programme within the Construction Soil and Water Management Plan (refer to Section 7).

The water quality monitoring methodology as stated within the CSWMP is as follows;

"Following rain events of greater than 20mm in a 24-hour period, JHLOR will undertake post rainfall inspections of monitoring locations to determine if there is any change in water quality post a significant first flush. An 'event' is defined as the first 20mm rainfall event within a 24-hour period. In the case of multiple consecutive events, only the first will be monitored. Monitoring will resume after a seven-day period of no rain. Visual inspections will include the following monitoring parameters:

- *Water clarity and colour*
- *Odour*
- *Description of flow and quantity*
- *Oil and Grease determination*
- *Details of any foreign objects within the water, and*
- *Visible runoff (into the water body)*

JHLOR will maintain a record of the inspections (including photographs) within the SMC Project drive.

Where water quality issues are visibly observed JHLOR will investigate further to determine if the source of the issue is related to JHLOR construction activities (where possible, noting safe access limitations). The JHLOR Environmental Manager or delegate will discuss changes in water quality associated with Construction with the JHLOR Construction Team to determine if further controls may be implemented, noting that any controls must be feasible and reasonable.

Once works in a particular area have been completed and any disturbed ground (from the works) reinstated to a suitable condition the associated monitoring within the particular area will cease.

It is noted that post-rainfall inspections within 24 hours of some drainage crossings and outlets may not be possible in some circumstances, including:

- Where there are safety concerns, or access is restricted due to rail safe working requirements
- Where erosion and sediment controls prevent access to an outlet and removing those controls would present a risk to water quality (e.g. removing drain guards).

Weather monitoring will be conducted using data from the Canterbury Racecourse weather station, accessed via the bureau of Meteorology website (http://www.bom.gov.au)."

Water quality monitoring locations are included within Appendix F of the CSWMP. Canterbury Racecourse BOM weather observations were used to determine the amount of rainfall in a 24hr period, forming the basis of when monitoring occurred.

Pre-construction (baseline) monitoring was undertaken prior to the start of Construction in late March 2021, noting that works did not commence across the entire project site in March. The baseline for water quality monitoring was updated with two extra sites (eastern-side canterbury compound and BEW) during May and September of 2021. Monitoring was undertaken during dry conditions (no rainfall within the last 24hrs). Pre-construction monitoring was undertaken with the same visual and qualitative approach as described above.

The results of the Construction Water Quality Monitoring Programme are included in Section 3.

There are currently no active sediment basins on the project, and none have been identified during the construction phase of the project to date.

2.2 Noise and Vibration monitoring

As part of the Noise and Vibration Assessment within the Sydney Metro Sydenham to Bankstown Upgrade Environmental Impact Statement, the area surrounding the entire Project site was divided into 13 Noise Catchment Areas (NCAs). SMC works occur across all 13 NCA's depending on where works will reside, there are some locations where works are more consistent than others. Noise monitoring was undertaken in 2016 to determine the Rating Background Level for the 13 noise catchments. The Rating Background Levels for all NCAs are shown in Table 1.

Table 1 - RBLs for SSJ Noise Catchment Areas

NCA	Daytime RBL (7am to 6pm)	Evening RBL (6pm to 10pm)	Night RBL (10pm to 7am)
1	38	38	33
2	38	38	33
3	38	38	34
4	40	40	35
5	36	36	32
6	45	42	35
7	41	41	35
8	47	47	41
9	44	44	36
10	47	47	41
11	47	47	39
12	54	51	42
13	42	42	39

Based on planned work in the construction phase, impacts were largely spread across the noise catchments.

Figure 1 shows the noise catchment boundaries across the project.

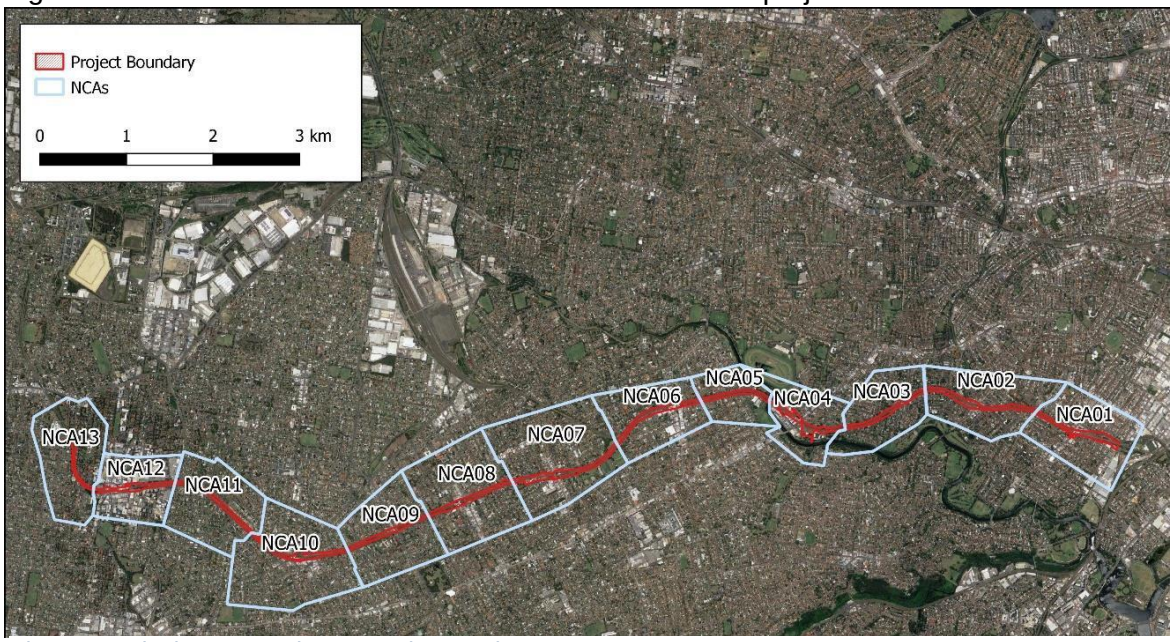


Figure 1 Sydenham to Bankstown Noise Catchment Areas

Monitoring is undertaken during construction activities (including out of hours works) where required in accordance with Section 8 of the CNVS and for validation purposes. Attended noise monitoring is undertaken in the event of a noise complaint. Where a complaint occurs, monitoring will be undertaken at the complainant's property, nearest to any work.

Vibration monitoring will be undertaken before and during works where buildings or structures exist within the safe work distances of vibratory plant. Monitoring will also be undertaken where vibration generating actives that have the potential to impact on heritage items. Monitoring will be undertaken for vibration causing "activities" at a structure and applied as indicative across the project area in similar circumstances (e.g. the methods and plant used for the compaction of batters is consistent across the site, as such the monitoring at one structure is representative of the impacts at other structures). Representative monitoring should be undertaken at the most sensitive structure for which it is to be applied. In accordance with the requirements of the CNVS, the vibration limits have been set out in the British Standard BS 7385-2:1993.

3. Results

3.1 Surface Water

Water quality monitoring inspections were undertaken a total of 8 times during this reporting period. These occurred between the dates 02/03/2022 – 10/07/2022.

One baseline monitoring inspection was conducted in March 2021 (02/03/2021) and updated with 2 additional locations including BEW (10/09/2021 – see figure 2) and Canterbury compound (14/04/2021 – see figure 3). Refer to Table 2 for a summary.

Full monitoring inspections, including commentary and photographs are maintained on the JHLOR Project Drive. These are available upon request. See Appendix A for a sample water monitoring report. Where monitoring indicates adverse impacts associated with JHLOR works this Section of the CMR will explore the details and corrective actions in detail. However, there were no adverse impacts identified during the period.

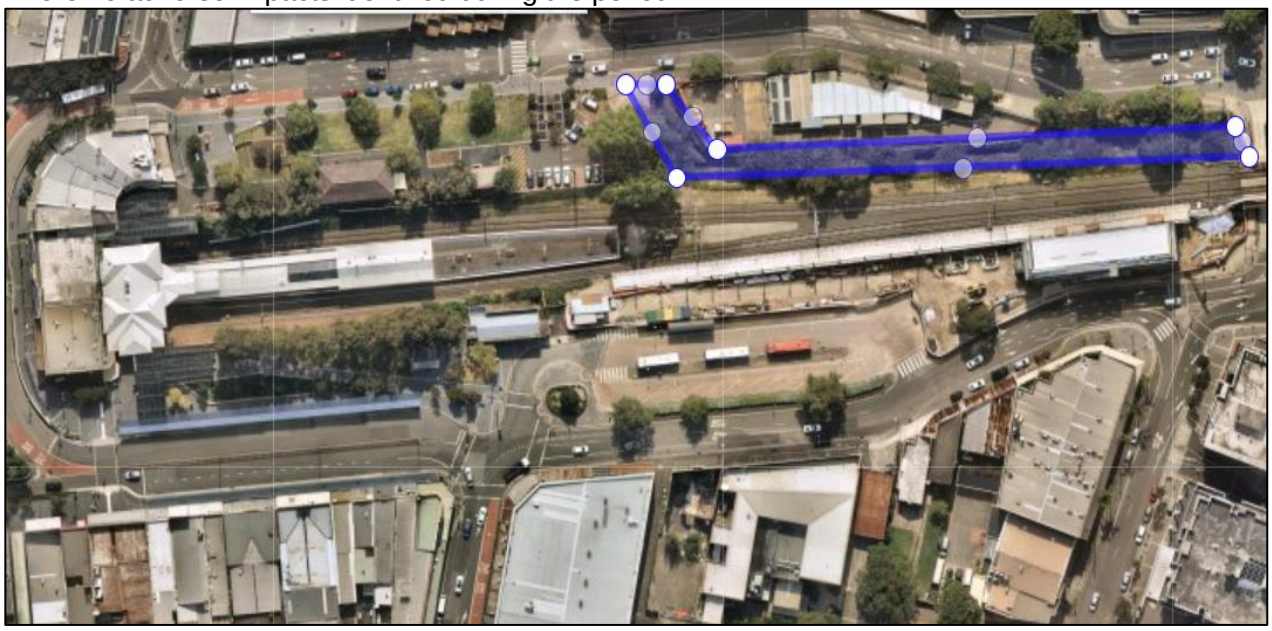


Figure 2. Bankstown early works (water quality location 9)

Figure 3. Canterbury Compound (water quality location 8)

Table 2 - Surface Water Monitoring Results for Construction Phases for wet weather events (20mm rain)

Date	Total Rainfall (mm)	Rainfall Event (hours)	Adverse Impacts relating to JHLOR works recorded	Monitoring Location Checklist	Notable Observations	Observations relating to JHLOR impacts	Follow up actions with construction team
02/03/2022	44.6	48	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Checked. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked. **Location 5 Lakemba:** Not checked, drainage network below ground. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Dulwich Hill:** Not from any JHLORJV related works, cloudy water from main culvert with medium flow. Usual brown water from small side tributary (LHS). RHS black drainage pipe (overflow from worksite concrete structure – not JHLOR subcontractor), low flow appears clean. **Wiley Park:** NO JHLOR works in area. Downstream (Nth side) High flow turbid water in the western culvert, including small inlet from the side (Source unknown, potentially from a concrete GLT. NOTE: No dirty water discharge from upstream locations (gate WP3). High flow, less dirty water flowing in the eastern culvert. Upstream (Sth side). High flow, cloudy to dirty water flowing water flowing in culverts. **Canterbury Compound:** Upstream water is turbid/cloudy in water way. Typical of previous rain events. Unknown source of turbid/cloudy water, water from the compound is clean.	None	N/A
19/03/2022	32.6	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Checked. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked. **Location 5 Lakemba:** Not checked, drainage network below ground. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Not checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Dulwich Hill:** Cloudy water from main culvert with medium flow. Usual brown water from small side tributary (LHS). RHS black drainage pipe (overflow from subbie concrete structure) – low flow appears clean. **Hurlstone Park:** Low flow, water is clear in main culvert but slightly cloudy when ponded in deeper water. No evidence of dirty flows from slopes along JHLOR GST, ERSED was reinstated prior to rainfall event. **Wiley Park:** Low flow turbid water in the western culvert. Slightly cloudy water from small inlet on RHS, (Source unknown, possibly from concrete GLT – not related to JHLORJV works. No dirty water discharge from upstream locations (gate WP3). **Canterbury Compound:** Upstream water is turbid/cloudy in water way. Typical of previous rainfall events. Unknown source of turbid/cloudy water but upstream is from north side of track. Water from compound is clean.	None	N/A
26/03/2022	25.8	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Checked. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked.	**Hurlstone Park:** Low flow, water is clear in main culvert but slightly cloudy when ponded in deeper water. No evidence of dirty flows from slopes along JHLOR GST, ERSED was reinstated prior to rainfall event. **Canterbury Compound:** turbid/cloudy water observed in creek. No JHLOR works.	None	N/A

				Location 5 Lakemba: Not checked, drainage network below ground. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Not checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.			
29/03/2022	21.4	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Checked. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Not checked, no PO available. **Location 5 Lakemba:** Checked. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Not checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Canterbury Compound:** upstream water is turbid. Water is flowing from north side of corridor under the track and water from the compound carpark is clean.	None	N/A
12/05/2022	24.8	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Checked. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked. **Location 5 Lakemba:** Not checked, drainage network below ground. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Dulwich Hill:** Cloudy water from main culvert with medium flow. Usual brown water from small side tributary (LHS) from an unknown source. Appears to be possible vegetation damage due to high flow. **Wiley Park:** Downstream (Nth side) Slightly cloudy water in the west with cloudy in middle culverts No water from upstream location (gate WP3). **Canterbury Compound:** Upstream water is slightly turbid/cloudy in the water way (Source unknown, flowing from north side of the corridor).	None	N/A
24/05/2022	21	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Not checked, no PO available. **Location 3 West Bank of Cooks River:** Checked.	**Dulwich Hill:** Cloudy water from main culvert with medium flow. Usual brown water from small side tributary (LHS). **West bank of Cook's River:** No construction activity in the past 2 weeks. Low flow water	None	N/A

				Location 4 Belmore Triangle: Checked. **Location 5 Lakemba:** Checked. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	from discharge pipe was clean, general odour in this area (possibly from the low water level exposing sediment on the base of Cook's River. **Wiley Park:** Blockage of the connection of Western to Central culvert due to leaf litter. Central culvert observed with dirty water flowing from upstream (Unknown source). **Canterbury Compound:** Upstream water was slightly cloudy. No evidence of the source to create turbid/cloudy water. Water from the compound is clean.		
02/07/2022	39.4	48	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Not checked, no PO available. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked. **Location 5 Lakemba:** Checked. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Lakemba Countryside**: High flow turbid water in culverts. **Wiley Park:** NO JHLOR works in area. Medium flow turbid water in the western culvert. **Stacey St, City side of Bankstown DOWN track:** High flow Turbid Water **Bankstown Early Works**: High flows, slightly turbid water in both culverts at intersection.	None	N/A
10/07/2022	26.6	24	No	**Location 1 Dulwich Hill:** Checked. **Location 2 Hurlstone Park:** Not checked, no PO available. **Location 3 West Bank of Cooks River:** Checked. **Location 4 Belmore Triangle:** Checked. **Location 5 Lakemba:** Not checked. **Location 6 Wiley Park:** Checked. **Location 7 Bankstown:** Not checked, no PO available. **Location 7 alt location:** Not checked. **Location 8 Canterbury Compound:** Checked. **Location 9 Bankstown Early Works:** Checked.	**Lakemba Countryside**: High flow turbid water upstream (south side). **Wiley Park:** NO JHLOR works in area. Medium flow turbid water in the western culvert.	None	N/A

3.2 Noise and Vibration Monitoring

Attended noise monitoring was undertaken as required for OOHW and possessions, where noise modelling predicted significant exceedance of Rating Background Levels (RBL) or otherwise required validation using this method.

Continuous noise monitoring was undertaken for OOHW and possessions. They were located at the locations with the highest risk of noise exceedance of RBL as established by the JHLOR noise models.

These noise monitoring methods have been conducted for activities with significant predicted exceedances of noise management levels, mostly occurring where works are conducted in the evening or night-time periods. SMC have committed to review impacts and mitigation of construction activity and document outcomes where an exceedance is recorded or a complaint is made related to project construction activities.

Noise monitoring results are summarised in Table 3. Noise monitoring results from the reporting period indicated that works occurred at noise levels at or below predicted levels, with the exception of five exceedances throughout the March to August 2022 period. Five (5) exceedances were identified, however were not due to JHLORJV construction activities. The exceedances measured were as follows;

1. NCA12, on 07/05/2022 The predicted LAeq15min was set lower than the background noise level. As such exceedances occurred throughout the working day. The highest exceedance being at 11:30 and the continuous noise monitoring was conducted from 2 West Terrace in Bankstown. Predicted noise model was 58 dB but LAeq15min of the highest exceedance was 64dB. Although the construction activities were audible, as per the previous trends and it being on a Saturday (public weekend activities within the Bankstown Social Hub). The continuous noise monitor was also located at a height from works resulting in a direct line of sight to an extended noise catchment. Further monitoring indicated that there were extraneous noise sources which were predominantly from noise traffic. Additionally, when works were concluded, the sound level remained high due to the ongoing public holiday activities with an average dB of 62.
2. NCA1, on 17/05/2022 at 22:45 attended noise monitoring from 252 Livingstone Road in Marrickville was undertaken. The predicted noise level was 45 dB but attended noise monitoring read 58 dB. The noise monitoring indicated that it reached approximately 70dB when trains were passing and went back down to approximately 40 dB in the absence of traffic. Noise prediction validated, exceedance attributed to vehicles and trains passing.
3. NCA1, on 17/05/2022 at 23:00 attended noise monitoring from 252 Livingstone Road in Marrickville was undertaken. The predicted noise level was 45 dB.Attended noise monitoring read 49 dB. Only audible noise was from the generator hum in the background, the exceedance occurred from oncoming traffic thus the JHLORJV noise models/ works were still validated.
4. NCA1, on 21/05/2022 at 14:25 attended noise monitoring from 30 Meeks Tunnel Nth abutment was partaken. The predicted noise model indicated 42 dB but attended noise monitoring read 66 dB. Construction activities were not audible and the dominant noise was from the constant traffic on Victoria Road (road was also wet) thus JHLORJV were still complaint
5. NCA8, on 13/08/2022 at 11:50 attended noise monitoring from Lakemba Library at the access gate was partaken. The predicted noise model indicated 66dB but the attended noise monitoring read 68.6dB. Although this was an exceedance JHLORJV were still complaint as this was generated from non-construction related activities. The predominant noise was from the heavy, constant flow of traffic in particular the additional buses that are replacing the trains.

It is noted that there is a possibility in which the wind speeds exceeded the recommended maximum level for noise monitoring as described within "*AS1055-2018 Description and measurement of environmental noise*", potentially contributing to the existing exceedances.

As part of the noise monitoring, significant extraneous noise has been recorded as impacting receivers and monitoring results, including throughout the night-time period, well above the given RBLs. Monitoring locations and timing has been adjusted where necessary to try to isolate construction impact, however this is often not feasible. Common extraneous noise sources include:

- Noise from passing freight trains on the ARTC line
- Road traffic, particularly rail replacement buses during rail possessions

There were 9 complaints throughout this reporting period. Three of the complaints were noise complaints which were found to be attributed to JHLORJV works.

1. 04/03/2022 Hurlstone Park – Stereo playing – Written communication issued to all sub contractors stating 'no radios/music to be played within the rail corridor, workforce briefed at prestart the week after – avoidable.
2. 05/04/2022 Bankstown – OOHW sewer connection – AA previously offered to resident and was declined, after complaint respite was re-offered and was taken up – Unavoidable.
3. 08/06/2022 Bankstown – Steel Install within construction hours – works were apart of the approved works; based on individual circumstance noise cancelling headphones/earplugs were offered but were declined. Respite vouchers were offered and accepted; other forms of noise attenuation were offered but were declined – noise within modelled levels – Unavoidable.

As per the Construction Noise and Vibration Impact Statement, real time vibration monitoring is conducted when the works are predicted to exceed the building damage vibration goals and/or human comfort vibration goals. No works throughout this reporting period indicated the need for vibration monitoring.

To date, there has been no exceedances of vibration from construction activities, and recorded vibration (PPV in mm/s) has been well below cosmetic vibration limits for affected structures. As above, attended noise and vibration monitoring has identified that external non-construction noise and vibration sources are frequent in the areas, which is also expected to reflect in the results of any real-time continuous monitoring.

Table 3 – Noise Monitoring Results

NCA	Date	Time (hrs)	Duration	Construction Activities	Audible noise from SSJ construction activities	Main source of noise	LA(eq)	L_{AMax}	Period	Predicted construction soundpressure level (LA(eq,15min))	Compliance	Comments
NCA8	19/03/2022	12:10	15 mins	Installation of troughing on GST posts	Yes, Intermittent, grinding and drilling with battery powered tools	Construction	64.3	91.6	Day	69	Yes	13 Railway Pde, Lakemba. Monitoring at 40m. ID #: L692. Noise was audible. Intermittent, grinding and drilling with battery powered tools. A portion of the work was behind an embankment. Public vehicles passing in roadway. In some instances at high speed + extraneous noise from Trac Sub contractors working on DOWN track.
NCA12	19/03/2022	10:15	15 mins	Road saw intersection of West and South Terrace	Yes, Saw cutting	Road and Construction	83	94	Night	85	Yes	At the façade of 2 West Tce. Works conducted in accordance with ROL. Possession works within the rail corridor reduced due to industrial action. Saw cutting started at 21:50 and was completed by 22:10.
NCA4	26/03/2022	7:15	15 mins	NDD works around GST posts and service searching. Agi offloading stab sand.	Yes, NDD works	Construction	64.7	76	Day	69	Yes	Monitoring at 50m. ID #: L700 NDD Service searching was conducted at 75% throttle. Noise was audible. No offsite activities in area.
NCA12	26/03/2022	10:15	15 mins	Road trenching and removal, service location and temporary road reinstatement	Yes, plant	Road & Construction	61	81	Night	85	Yes	At the grass verge, n/e corner of West Tce and South Tce, Banksown. works conducted in accordance with ROL. Possession works within the rail corridor reduced due to industrial action.
NCA8	01/04/2022	0:45	15 mins	Emergency recovery of bogged concrete pump in the corridor cess	Yes, recovery truck	Construction	60.3	75.6	Night	73	Yes	Monitoring at 15m. ID #: L702 Noise generated from the recovery truck was audible (low revs). Recovery truck was positioned outside the corridor and pulled the bogged concrete pump to a safe distance further away from the 'danger zone'. Activity was short duration starting at 00:30. Site was secure with recovery truck off site by 01:15.
NCA1	07/05/2022	17:15	11 hours	Hirail trucks transfer scaffold + erection with crews and sand blasting of underside of bridge structure. Installation of foundation footings (inc service searching) at track level.	Yes, vac truck	Vac Truck	73	78	Day	74	Yes	Continuous monitoring at Livingstone Rd, Marrickville. Highest LAeq15min value of 73 dB due to general construction noise in line with predicted 74 dB. Respite provided to residents. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 60 dB.

NCA	Date	Time(hrs)	Duration	Construction Activities	Audible noise from SSJ construction activities	Main source of noise	LA(eq)	LAMax	Period	Predicted construction soundpressure level (LA(eq,15min))	Compliance	Comments
NCA1	07/05/2022	20:15	13 hours	Sand blasting of underside of bridge structure. Installation of foundation footings(inc service searching) at track level. Concrete works	No	Plane passing	70	72	Night	72	Yes	Continuous Monitoring at Livingstone Rd, Marrickville. Highest LAeq15min value of 70 dB due to a period of plane passing. Predicted 72 dB. AA provided to residents. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 6pm - 7am of 59 dB.
NCA2	07/05/2022	10:30	11 hours	Longitudinal work area with progressive removal of redundant footings by excavation & jackhammering. Stockpile of concrete and steel in skip bins	Yes	Item dropping & vehicle movement	51	78	Day	74	Yes	Continuous Monitoring from Jack Shanahan Reserve, Dulwich Hill. Highest LAeq15min value of 51 dB due to general construction below predicted value of 74 dB. Noise periods were generally consistent throughout day and night periods and well below predictions. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 51 dB.
NCA2	06/05/2022 & 07/05/2022	06:45	13 hours	Longitudinal work area with initial formation of ramps onto track then multiple plant items establishing early through access gate into corridor DU5 & DU6. Longitudinal work area along the corridor with: - OHWiring crews progressive removal redundant steel structures. - SEG fence establishment into work areas, ballast stockpiling, equipment & material transfer, augering.	Yes	Excavator	59	93	Night	67	Yes	Continuous Monitoring from The Parade, Dulwich Hill. Highest LAeq15min value of 59 dB due to excavators and general construction below predicted value of 67 dB. Noise levels were generally consistent through the evening. Residents provided AA. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 6pm - 7am of 35 dB
NCA2	07/05/2022 & 08/05/2022	13:15	11 hours	Longitudinal work area with progressive SEG fence augering, installing steel cage and concrete works.	Yes	Excavator	57	84	Day	71	Yes	Continuous Monitoring from The Parade, Dulwich Hill. Highest LAeq15min value of 57 dB due to excavator works well below predicted value of 71 dB. Noise levels were generally consistent and above respite levels through the day periods. Residents provided respite, with noise levels hovering near 20 dB above RBL. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 50 dB.
NCA	Date	Time(hrs)	Duration	Construction Activities	Audible noise from SSJ construction activities	Main source of noise	LA(eq)	LAMax	Period	Predicted construction soundpressure level (LA(eq,15min))	Compliance	Comments

NCA3	8/05/2022	0:30	13 hours	Longitudinal work area with progressive - SEG fence augering, some jackhammering, installing steel cage and prep work for concrete. - OHWiring crews progressive removal redundant steel structures.	Yes	Workers talking & hammering activities	56	72	Night	68	Yes	Continuous Monitoring from Melford Rd, Hurlstone Park. Highest LAeq15min value of 56 dB due to construction activities below predicted value of 68 dB. Period of high noise extended for 45 minutes plateauing either side. AA was offered for all nights, however the first night works were cancelled, due to late isolation. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 6pm - 7am of 48 dB.
NCA3	8/05/2022	0:30	13 hours	Longitudinal work area with progressive: - SEG fence augering, some jackhammering installing steel cage and concrete works - OHWiring crews removal redundant steel structures and foundations (excavation and jackhammering)	Yes	Jack Hammering	63	92	Day	64	Yes	Continuous Monitoring from Melford Rd, Hurlstone Park. Highest LAeq15min value of 63 dB due to hammering works prediction of 64dB. Noise levels were nearing 60 dB for an hour period. Residents provided respite. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 53 dB.
NCA4	07/05/2022	7:45	11 hours	Church St: - Site establishment of piling crew/plant on bridge. -Early setup works for bolt installation Early works of longitudinal work area with progressive SEG fence augering, some jackhammering.	Yes	Jack Hammering	53	70	Day	70	Yes	Continuous monitoring from church street. Highest LAeq15min value of 53 dB due to hammering works below predicted 70dB. RO was offered. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 44 dB.
NCA4	08/05/2022	2:30	13 hours	Longitudinal work area with progressive: - SEG fence augering, some jackhammering installing steel cage and concrete works - OHWiring crews removal redundant steel structures and foundations (excavation and jackhammering)	Yes	General construction noise - vehicle squark	51	75	Night	70	Yes	Continuous monitoring from church street, Canterbury. Highest LAeq15min value of 51 dB due to construction activities below predicted value of 64 dB. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 6pm - 7am of 43 dB.
NCA	**Date**	**Time(hrs)**	**Duration**	**Construction Activities**	**Audible noise from SSJ construction activities**	**Main source of noise**	**LA(eq)**	**LAMax**	**Period**	**Predicted construction soundpressure level (LA(eq,15min))**	**Compliance**	**Comments**
NCA4	06/05/2022, 07/05/2022 & 08/05/2022	6:00	13 hours daily	Monitor at laydown - Major access point onto tracks and early startup of plant & equipment moving onto track. Station contractor using this	Yes	General Construction / compound	70	93	Night	71	Yes	Continuous monitoring from Broughton St, Canterbury. Highest LAeq15min value of 70 dB due to construction activities below predicted value of 71 dB. Period

				area. Longitudinal work area with progressive: - SEG fence augering, some jackhammering installing steel casings, reinfrocing cages and concrete works		activities						of high noise extended for 60 minutes from 5am - 6am. AA was offered Friday, Saturday and Sunday night. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions with 60-minute peak periods. Average LAeq15min between 6pm - 7am of 60 dB.
NCA4	07/05/2022 & 08/05/2022	17:45	11 hours	Longitudinal work area with progressive: - SEG fence augering, some jackhammering installing steel casings, reinforcing cages and concrete works	Yes	General construction / metal & material noise	68	96	Day	70	Yes	Continuous monitoring from Broughton St, Canterbury. Highest LAeq15min value of 68 dB due to construction activities below predicted value of 70 dB. Period of high noise extended for 60 minutes from 5pm - 6pm on Saturday and Sunday; expected from workers returning to compound. Residents provided respite for Saturday and Sunday with LAeq15min 20 dB above RBL. Predictions validated. No exceedance identified due to construction activities. LAeq15min generally below predictions. Average LAeq15min between 7am - 6pm of 60 dB.
NCA6	06/05/2022, 07/05/2022 & 08/05/2022	6:45	13 hours daily	Multiple plant items establishing early through CP9 access gate into corridor. Longitudinal work area with progressive: - General construction with multiple number of hirail excavators, hirail telehandlers, crane and balloon tyre dumpers. Trucks being loaded & carting material from site	Yes	Construction activities	51	80	Night	69	Yes	Continuous monitoring from Duke St, Campsie. Highest LAeq15min value of 52 dB due to construction activities well below predicted value of 69 dB. Period of high noise extended for 60 minutes from 6:30am -7:30am on Saturday morning. AA was offered Friday, Saturday and Sunday night. Predictions validated. No exceedance identified due to construction activities. Average LAeq15min between 6pm - 7am of 43 dB.
NCA	**Date**	**Time(hrs)**	**Duration**	**Construction Activities**	**Audible noise from SSJ construction activities**	**Main source of noise**	**LA(eq)**	**LAMax**	**Period**	**Predicted construction soundpressure level (LA(eq,15min))**	**Compliance**	**Comments**
NCA6	07/05/2022 & 08/05/2022	7:15	11 hours daily	Multiple plant items establishing through CP9 access gate into corridor. Longitudinal work area with progressive: - General construction with multiple number of hirail excavators, hirail telehandlers, crane and ballooon tyre dumpers. Trucks being loaded & carting	Yes	Construction activities	54	82	Day	70	Yes	Continuous monitoring from Duke St, Campsie. Highest LAeq15min value of 54 dB due to construction activities well below predicted value of 70 dB. Period of high noise extended for 60 minutes from 6:30am -7:30am on Saturday morning. Respite was offered Friday, Saturday and Sunday day. Noise levels were generally consistent from Friday

				material from site. SEG fence works (50m) Drainage works (60m) Duke St brideg crane works (80m)								night - Monday morning. Predictions validated. No exceedance identified due to construction activities. Average LAeq15min between 6pm - 7am of 46 dB.
NCA12	07/05/2022 & 08/05/2022	11:30	11 hours daily	Multiple plant within site boundary and on rail: - Two 45t cranes lifting structural steel up for the platform canopy, scissor lifts working around both cranes - Installation of GST and GLT, 6.5t excavator	Yes	Construction activities. Drilling & sawing	64	103	Day	69	Yes	Continuous monitoring from 2 West Tce, Bankstown. Highest LAeq15min value of 65 dB due to construction activities below predicted value of 69 dB. Period of noise above 60 dB is consistent from 7am - 6pm on Saturday and Sunday. Predictions validated. No exceedance identified due to construction activities. Average LAeq15min between 7am - 6pm of 62 dB.
NCA12	07/05/2022	2:15	13 hours	Install 1x Portal, Reprofiling, structure and footing removal - On track - 8t Hi-rail multicrane - 2x hi-rail EWP - Scissor lifts on ground around 45t cranes	No	General noise activity in the area, vehicle and pedestrian traffic. Consistent with regular Friday & Sunday night where no works occur.	64	87	Night	58	Yes	Continuous monitoring from 2 West Tce, Bankstown. Highest LAeq15min value of 64 dB due to general noise activity in the area. This is above the predicted value of 58 dB. Although construction activities were not occurring from 6pm on Friday and Sunday night, noise levels are seen to exceed 60 dB (exceedance of night work predictions) until around 10pm and plateauing thereafter. Continuous monitoring on Saturday night while works were occurring indicated a similar trend however plateauing slightly later in the night (based on previous attended observations likely due to late night public weekend activities within the Bankstown social hub). Further to this, the continuous noise monitor was located at a height from the works resulting in a direct line of sight to an extended noise catchment. Elevated noise levels recorded from 21:00 - 23:00 and also a 30-minute period from 2:00 - 2:30am were identified as extraneous noise sources, predominantly road traffic. Predictions validated. No exceedance identified due to construction activities. Average LAeq15min between 6pm - 7am of 48 dB.

NCA	Date	Time(hrs)	Duration	Construction Activities	Audible noise from SSJ construction activities	Main source of noise	LA(eq)	LAMax	Period	Predicted construction sound pressure level (LA(eq,15min))	Compliance	Comments
NCA6	07/05/2022	12:00	15 mins	SEG fence works (50m) Drainage works (60m) Duke St bridge crane works (80m)	Yes	General construction with multiple number of hirail excavators, hirail telehandlers, crane and balloon tyre dumpers. Trucks being loaded & carting material from site	54	82	Day	66	Yes	Attended monitoring at the corner of South Pde/ Park St, Campsie from inside the corridor. Noise was audible but was well within the predicted noise model.
NCA04	08/05/2022	12:15	15 mins	Scaffold removal (30m) OHWiring clean-up and removal of redundant steel members (70m) SEG fence works inc concrete activities(120m)	Yes	Scaffold removal under Church St bridge - not audible. General construction with multiple number of hirail excavators, hirail telehandlers, crane and ballooon tyre dumpers. All at a distance from the monitor	57	83.8	Day	68	Yes	Attended monitoring at the south side of Church St bridge, Hurlstone Park. Noise from JHLORJV was barely audible.
NCA1	17/05/2022	22:45	15 mins	Hand drilling + Generator	No	Vehicles passing	58	N/A	Night	45	Yes	Attended noise monitoring from 252 Livingstone Rd. Approximately 70dB when vehicles or trains passing, back down to approximately 40dB in absence of traffic.
NCA1	17/05/2022	23:00	15 mins	Hand drilling + Generator	Yes	Vehicles passing	49	N/A	Night	45	Yes	Attended noise monitoring from 252 Livingstone Rd. Audible noise from the generator hum in the background.
NCA1	17/05/2022	23:18	15 mins	Hand drilling + Generator	Yes	Vehicles passing	41	N/A	Night	45	Yes	Attended noise monitoring from 252 Livingstone Rd. Generator was turned off halfway through the measuring length.
NCA1	17/05/2022	23:52	5 mins	Hand drilling + Generator	Yes	Vehicles passing	N/A	N/A	Night	45	Yes	Attended noise monitoring from 252 Livingstone Rd. Instantaneous level of generator and drill operating in cutting under bridge adjacent track. LAeq5min approximately 40dB.

NCA	Date	Time(hrs)	Duration	Construction Activities	Audible noise from SSJ construction activities	Main source of noise	LA(eq)	LAMax	Period	Predicted construction sound pressure level (LA(eq,15min))	Compliance	Comments
NCA1	21/05/2022	14:25	15 mins	Work inside Meeks Rd tunnel. 2 EWP's repairing walls of tunnel	No	Traffic	67	89	Day	42	Yes	Monitoring at 30m from Meeks Rd tunnel on Nth abutment. Construction activities are not audible. Dominant noise was from a constant flow of traffic on Victoria Rd (road was wet). Additional construction activities by ST and Interflow (on Sth side of Meeks Rd Tunnel) were also not audible at the monitoring location.
NCA7	09/06/2022	1:55	15 mins	Hand digging in ballast for shallow ULX + site light	Yes	Hand digging in ballast	54	67.0	Night	54	Yes	Monitoring at 45m from work (on track). Hand digging of shallow trench in ballast with pelican picks. 100 mm conduit placed in trench and backfilled with ballast. Short duration activity during last/first train. Activity between 01:45 and 03:30
NCA8	13/08/2022	11:50	15 mins	Vac truck service searching	Yes	Dominant noise was from traffic and in particular the additional buses that replaced trains.	69	90.8	Day	66	Yes	Monitoring at 35m from work, Lakemba library (at access gate). Although there was a measured exceedance above the predicted this is not generated from construction related activities. Dominant noise was from the heavy, constant traffic and in particular the additional buses that replaced trains.

Vibration

Vibration monitoring was not required throughout this reporting period.

4. Mitigation Measures

4.1 Noise and Vibration

Standard mitigation measures as applicable were implemented as per Section 7 of the Construction Noise andVibration Management Plan, and Sections 6.2 and 6.4 of the Construction Noise and Vibration Impact Statement. These were effective during the reporting period.

4.2 Water

Standard mitigation measures were implemented as per Section 6 of the Construction Soil and Water Management Plan. A new area-checklist is completed for every new area JHLORJV works is planning to commence in. This considers existing ERSED issues and assists in the developing of ERSED control plans. Controls were, identified, installed and repaired as required throughout this reporting period.

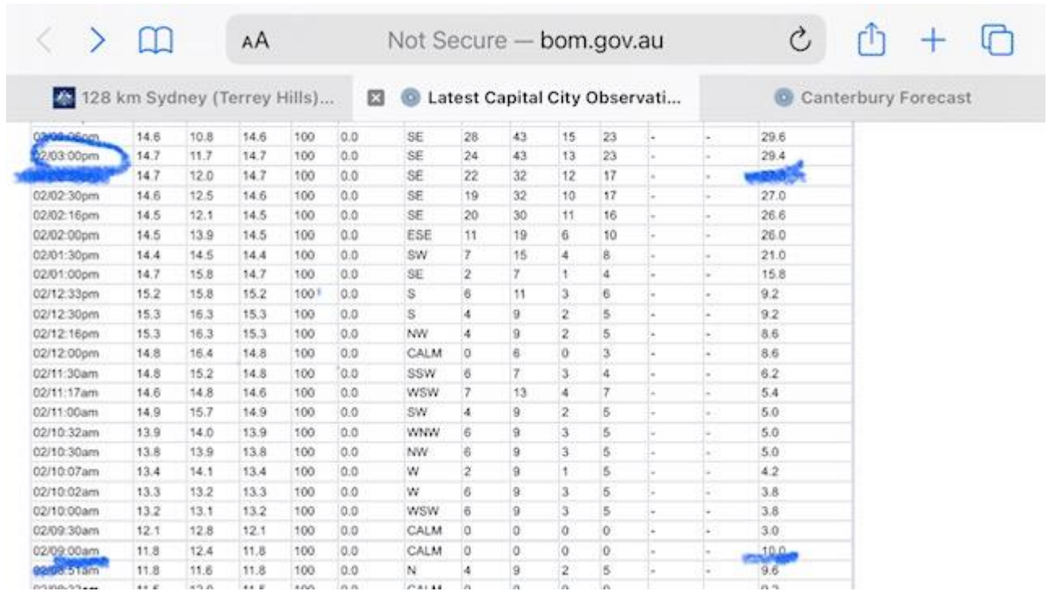
5. Conclusion

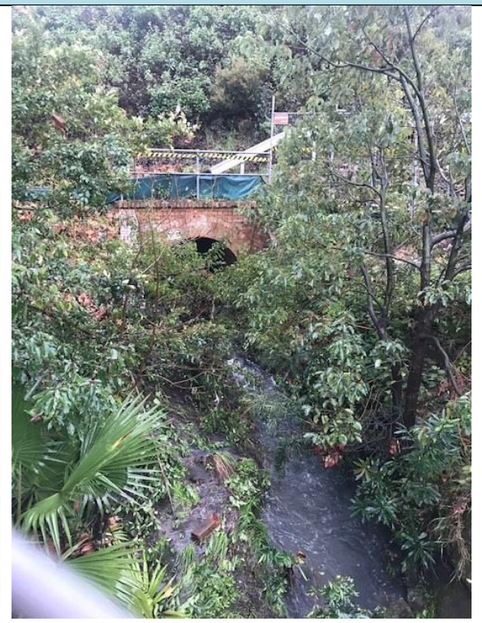
Pre-construction surface water monitoring began in March 2021, with results showing several instances of poor water quality due to detritus and turbidity. Monitoring during the March 2022 – August 2022 period indicated no adverse impacts associated with JHLOR activities.

Erosion-sediment control plans are maintained and reviewed regularly, and JHLOR conducts weekly and post rain environmental inspections. The Environment Representative also conducts bi-weekly inspections, and any observations are closed out within agreed timeframes.

Monitoring records have validated modelled noise and are consistent with the predicted impact of construction activities on noise catchment areas, including sensitive receivers. 5 exceedances of noise were measured but were established to not be associated with JHLORJV construction works.

6. Appendix A – Sample Water Monitoring Report

Inspection type	"DURING" WE01 possession, Rain Event on the 02/07/2022 (#19)
Rainfall (in previous 24hrs)	10+29.4mm = +-39.4mm end of inspection
Inspection by	Andre Kruize
Date(s) of inspection	02/07/22 between 13:00 -15:00
Other general notes	NOTE: Due to industrial action no isolation certs for 1500V and 11kV have been granted. In this respect no construction activities were conducted during WE01possession. Cant Compound - Rain data, inspection and photos were taken through the corridor during the inspection Weather data from Canterbury Weather Station.  AA Not Secure — bom.gov.au 128 km Sydney (Terrey Hills)... Latest Capital City Observati... Canterbury Forecast 02/03:00pm 14.7 11.7 14.7 100 0.0 SE 24 43 13 23 - - 29.4 02/02:30pm 14.6 12.5 14.6 100 0.0 SE 19 32 10 17 - - 27.0 02/02:16pm 14.5 12.1 14.5 100 0.0 SE 20 30 11 16 - - 26.6 02/02:00pm 14.5 13.9 14.5 100 0.0 ESE 11 19 6 10 - - 26.0 02/01:30pm 14.4 14.5 14.4 100 0.0 SW 7 15 4 8 - - 21.0 02/01:00pm 14.7 15.8 14.7 100 0.0 SE 2 7 1 4 - - 15.8 02/12:33pm 15.2 15.8 15.2 100 0.0 S 6 11 3 6 - - 9.2 02/12:30pm 15.3 16.3 15.3 100 0.0 S 4 9 2 5 - - 9.2 02/12:16pm 15.3 16.3 15.3 100 0.0 NW 4 9 2 5 - - 8.6 02/12:00pm 14.8 16.4 14.8 100 0.0 CALM 0 6 0 3 - - 8.6 02/11:30am 14.8 15.2 14.8 100 0.0 SSW 6 7 3 4 - - 6.2 02/11:17am 14.6 14.8 14.6 100 0.0 WSW 7 13 4 7 - - 5.4 02/11:00am 14.9 15.7 14.9 100 0.0 SW 4 9 2 5 - - 5.0 02/10:32am 13.9 14.0 13.9 100 0.0 WNW 6 9 3 5 - - 5.0 02/10:30am 13.8 13.9 13.8 100 0.0 NW 6 9 3 5 - - 5.0 02/10:07am 13.4 14.1 13.4 100 0.0 W 2 9 1 5 - - 4.2 02/10:02am 13.3 13.2 13.3 100 0.0 W 6 9 3 5 - - 3.8 02/10:00am 13.2 13.1 13.2 100 0.0 WSW 6 9 3 5 - - 3.8 02/09:30am 12.1 12.8 12.1 100 0.0 CALM 0 0 0 0 - - 3.0 02/09:00am 11.8 12.4 11.8 100 0.0 CALM 0 0 0 0 - - 10.0 02/08:51am 11.8 11.6 11.8 100 0.0 N 4 9 2 5 - - 9.6 01/09:32pm 11.1 10.7 11.1 100 0.0 WSW 4 9 2 5 - - 5.4 01/09:30pm 11.1 11.1 11.1 100 0.0 WSW 2 7 1 4 - - 5.4 01/09:00pm 11.0 10.2 11.0 100 0.0 WSW 6 9 3 5 - - 4.6 01/08:30pm 11.0 10.2 11.0 100 0.0 WNW 6 9 3 5 - - 4.6 01/08:00pm 11.0 10.2 11.0 100 0.0 WNW 6 9 3 5 - - 4.6 01/07:30pm 11.1 10.1 11.1 100 0.0 NW 7 11 4 6 - - 4.4 01/07:00pm 11.0 11.3 11.0 100 0.0 CALM 0 0 0 0 - - 4.2 01/06:30pm 10.9 10.1 10.9 100 0.0 WNW 6 9 3 5 - - 3.8 01/06:00pm 10.9 9.8 10.7 99 0.1 WNW 7 11 4 6 - - 3.8 01/05:30pm 11.0 10.5 10.8 99 0.1 WNW 4 7 2 4 - - 3.6 01/05:00pm 11.1 11.4 10.9 99 0.1 CALM 0 0 0 0 - - 3.0 01/04:30pm 11.2 10.4 10.9 98 0.2 WNW 6 9 3 5 - - 2.6 01/04:00pm 11.4 10.3 10.8 96 0.3 WNW 7 11 4 6 - - 2.4 01/03:30pm 11.7 11.2 10.8 94 0.5 WNW 4 9 2 5 - - 2.0 01/03:00pm 11.7 11.6 10.8 94 0.5 WSW 2 11 1 6 - - 2.0 01/02:30pm 11.7 10.9 10.9 95 0.4 WNW 6 9 3 5 - - 1.6 01/02:00pm 11.6 10.5 10.5 93 0.6 WSW 7 11 4 6 - - 1.6 01/01:30pm 11.5 10.3 10.4 93 0.6 W 7 13 4 7 - - 1.2 01/01:00pm 11.5 10.7 9.6 88 1.0 W 4 9 2 5 - - 0.6 01/12:30pm 11.8 10.3 9.2 84 1.3 W 7 11 4 6 - - 0.0 01/12:00pm 12.0 10.0 8.8 81 1.6 WSW 9 15 5 8 - - 0.0 01/11:30am 12.3 10.6 10.0 86 1.2 W 9 13 5 7 - - 0.0 01/11:00am 12.3 11.1 10.2 87 1.1 WSW 7 13 4 7 - - 0.0 01/10:30am 12.0 11.1 10.6 91 0.7 WSW 6 13 3 7 - - 0.0 01/10:00am 11.3 10.4 10.7 96 0.3 WNW 6 11 3 6 - - 0.0

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
Location 1 Dulwich Hill, country side, near commuter car park	Nil	**Water clarity and colour:** Clear water from main culvert with medium flow. No brown water from small side tributary (LHS). RHS black drainage pipe (overflow from subbie concrete structure) – low flow appears clean. **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** Evidence of high flows (vegetation damage) **Oil and Grease:** Nil **Details of any foreign objects within the water:** Nil **Other comments/description:** N/A	  ERSED Controls at Ewart St 	No JHLOR works during WE01 ERSED Controls in place at Ewart St No sign of dirty water from corridor		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
Location 2 Hurlstone Park, country side	Nil	**Water clarity and colour:** **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** **Oil and Grease:** **Details of any foreign objects within the water:** **Other comments/description:**	    No photos of the actual water in the culvert were taken at time of inspection (no PO available in afetrnoon) however photos from an earlier inspection in the morning show no sediment flow down slopes	No JHLOR work in area. No JHLOR works during WE01 Erosion controls in place – surface below GST is covered with geofab. No signs of sediment flow into culvert. Heavy vegetation and stabilized surfaces on either side of culvert (inside corridor		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
Location 3 West bank of Cook's River	No construction activity in last two weeks	**Water clarity and colour**: Medium flows from discharge pipe was clean. **Odour:** None **Description of flow and quantity/ Visible runoff (into the water body):** Cook's River is at high tide. Medium flow from pipe outlet **Oil and Grease:** None **Details of any foreign objects within the water:** Nil **Other comments/description:** Nil	    	Wairoa St. No construction activity in last week other than 2 concrete pours No JHLOR works during WE01 ERSED controls in place with no dirty water leaving site.		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
Location 4 Belmore Triangle Access Road	See comments	**Water clarity and colour:** High flow water in culvert is clear. No visible flows from side of culvert (ie from ballast access track). **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** High flows **Oil and Grease:** Nil **Details of any foreign objects within the water:** Nil **Other comments/description:** Nil	 	No JHLOR works during WE01 Work in Belmore Triangle. • Storage of GST materials and equipment + • spoil stockpiles alongside the track.		
Location 5 Lakemba, country side	**Downstream (North Side)** **Upstream (South side)**	**Water clarity and colour:** **Downstream (North Side):** Drainage network is below ground **Upstream (South side):** High flow turbid water in culverts **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** High flow turbid water. **Oil and Grease:** Nil **Details of any foreign objects within the water:** Nil **Other comments/description:** Nil	**Downstream (North Side)** Photos taken on this side. Drainage network is below ground. Photos shows clean water flowing in K&G  **Upstream (South side)** Two open culverts	No JHLOR works in area during WE01		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
			 Eastern culvert  Western culvert			
Location 6 Wiley Park, countryside.	No JHLOR works in area	**Water clarity and colour:** Downstream Western Culvert (Nth side) medium flow slightly turbid water. Small inlet from the RHS side is clear. NOTE: No dirty water discharge from upstream locations (gate WP3). Central culvert low flow with same colour water as the western culvert. Eastern culvert medium flow of clear water Upstream (Sth side) Not checked **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** Medium flows. No debris in water **Oil and Grease:** None **Details of any foreign objects within the water:** None **Other comments/description:** Nil	**Downstream (North Side)** Upstream catchment – clean water through access gate (WP3) into channel. Batters above culverts are stabilized. No construction activities in area    Western most culverts	No JHLOR work in area - WP3. Access checked - no dirty water flowing from stabilised access down to culverts. Wiley Park Station Contractor alongside culverts – no construction activities observed.		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
			 Middle culvert  Eastern most culvert. Both sides of the road			

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
			  **Upstream (South side) – No photo's taken on this side.** Western most culverts Middle culvert/pond Eastern most culvert. Both sides of road			
Location 7 Bankstown	Nil		**No PO available – not inspected – no JHLOR works in catchment** NOTE: This flow line is below ground and runs across the corridor from Nth to Sth and can be seen through pits only. They are all inside corridor			
Location 7ALT City side of Bankstown DOWN track (near Stacey St)	Nil	**Sth Side (only)** **Water clarity and colour:** High flow, turbid water. **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** see above **Oil and Grease:** Nil **Details of any foreign objects within the water:** No debris in water **Other comments/description** Nil	 	No JHLOR works within the catchment		
Location 8 'NEW' Cant Compound	No JHLOR works within the	**Water clarity and colour from Culvert Under Corridor.** Medium flow, upstream water is clear.		No JHLOR works within the catchment		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
	catchment	Low flow water from compound hard stand/asphalt into ballast drain is clean **Odour:** Nil **Description of flow and quantity/ Visible runoff (into the water body):** Medium flow **Oil and Grease:** Nil **Details of any foreign objects within the water:** Nil **Other comments/description:** Nil	 Water in ballast drain from car park  Upstream	**NOTE 1:** Low flow of clean water off asphalt parking surface at time of inspection. **NOTE 2**: Open swale (geofab/ballast lined) from JHLOR compound/offices shows clean water.		

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
			 Downstream			

Inspection Type:	JHLOR Construction Activities in area	Comments from Inspection of waterways	Photos	Additional Observations Are there any impacts related to JHLOR construction works	Follow up action required	Outcome of follow up action
Location 9 Bankstown Early Works	No JHLOR works in Bankstown during WE01.	**Water clarity and colour:** High flows. Slightly turbid water in both culvert at intersection. **Odour:** None **Description of flow and quantity/ Visible runoff (into the water body):** High flows – no visible run-off from ground in the immediate area. **Oil and Grease:** None **Details of any foreign objects within the water:** Nil **Other comments/description:** Nil		No construction work on culvert side. No JHLOR works in Bankstown during WE01.		